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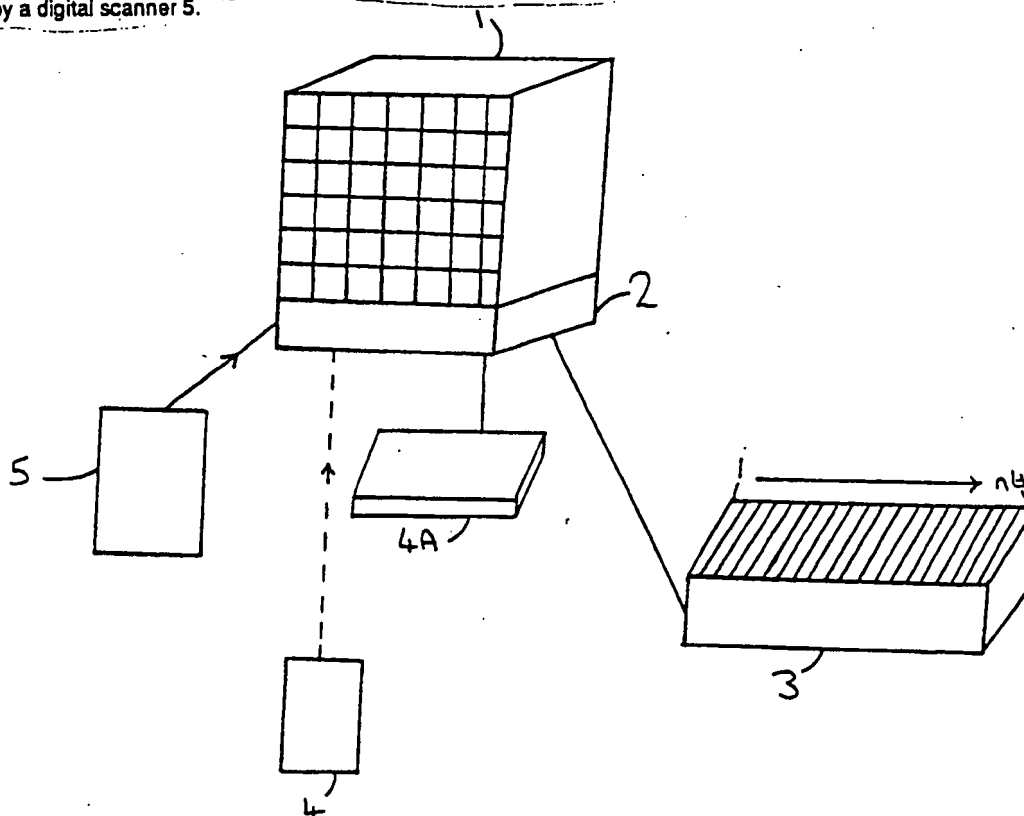
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(56) Documents cited
GB 2241105 A GB 2240869 A GB 2210724 A
EP 0313359 A2 WO 86/01326 A

(58) Field of search
UK CL (Edition K) G5R RB72 RB73 RCC
INT CL⁴ G11B

(54) CD-juke box with album cover display

(57) A musical reproduction system for use in a domestic or social environment which includes a monitor or screen coupled to a musical reproduction apparatus whereby selection of recordings displayed on the monitor or screen is used to direct selection or play of a given recording on the musical reproduction unit. The monitor may be in the form of a Conventional TV Screen 1 and displays information including a pictorial representation of an album cover. Selection of a required album is achieved by means of a touch sensitive infra-red matrix associated with the monitor. Information is stored within the system by a digital scanner 5.

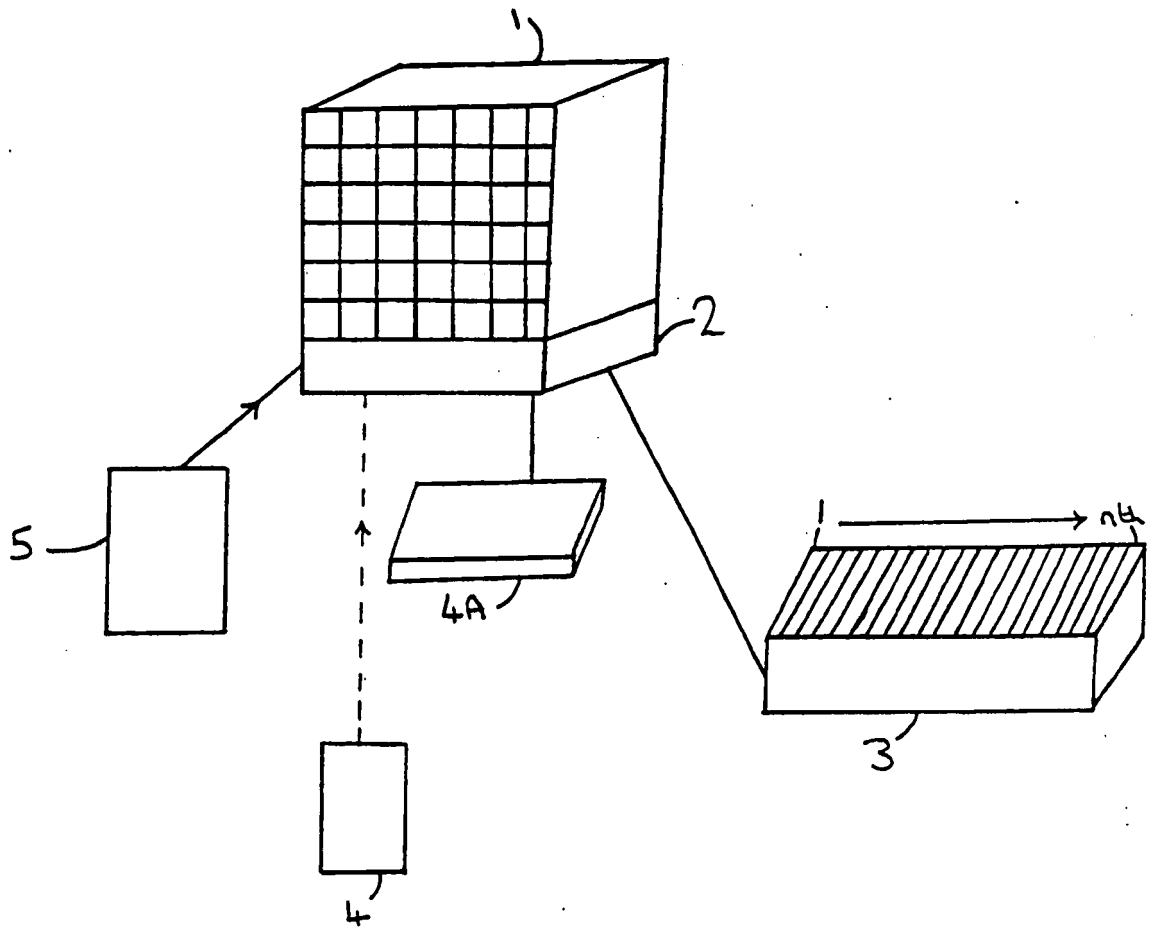


The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

The print reflects an assignment of the application under the provisions of Section 30 of the Patents Act 1977.

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Improvements Relating to Musical Reproduction Systems

This invention relates to musical reproduction systems and particularly, though not exclusively, musical reproduction systems for use in a domestic or social environment.

The playing of music in a domestic environment or a social club typically involves the provision of either a record player, a tape player or a CD player in conjunction with a choice of records, tapes or CD's respectively. In order to increase the variety of music available to an individual wishing to use a musical reproduction system a wide variety of records, tapes or CD's are usually collected by home owners or club members. The organising of different sorts of music into various categories and the maintenance of records, tapes and CD's, hereinafter referred to as recordings, involves diligence and time but such ordering and maintenance is quite often impaired by individuals using the recordings.

Further, once an individual has chosen from a selection a given recording to play on a given unit, the individual may wish to select a given track from a given recording and this can involve further searching through the packaging of the recording, which quite often indicates the number and nature of tracks on the recording, and also subsequently setting the unit to play the particular chosen track. It can therefore be seen that presently there is no ergonomically acceptable way of handling musical recordings for playing on a musical unit in a domestic or social environment.

It is therefore the object of the invention to provide an efficient and user friendly way of storing musical recordings such that they are easily accessed and subsequently played on a musical reproduction unit.

According to the invention there is therefore provided a musical reproduction system comprising:-

1. A monitor or screen adapted to display information relating to a plurality of recordings.
2. A control system operationally coupled to the monitor or screen for the purpose of controlling the information displayed on the monitor or screen.
3. A selection means operationally coupled to the control system for selecting information displayed on the monitor or screen.
4. A musical reproduction unit operationally coupled to the control system whereby selection of a given recording displayed on the monitor or screen brings about the playing of the selected recording.

It will be appreciated from the foregoing that information relating to a vast number of musical recordings can be stored in the control system and accessed via the monitor or screen in order to efficiently display information and that a user can select the playing of particular recordings using the information available on the monitor or screen.

Preferably the monitor or screen is a conventional television.

Preferably the system includes a remote control unit so that an individual can select a recording to be played from a remote location.

Preferably the remote control unit is a conventional

television remote controller.

Preferably selection is effected by a scrolling means which enables the user to scroll through the information stored in the control system and displayed on the monitor or screen.

Preferably the information displayed includes information relating to the recordings and also information relating to the packaging of the recordings and therefore preferably a representation of at least one album cover of at least one recording is displayed on the screen.

Preferably the album cover is displayed at the same time as information relating to the number and variety of recordings on the album.

Preferably an array of album covers and/or information relating to the recordings on the albums are displayed on the screen simultaneously.

Preferably the selection means comprises a touch sensitive matrix such that an individual using the system can select a recording to be played on the musical reproduction unit by simply pointing to a pre-selected recording displayed on the monitor or screen.

Preferably the touch sensitive matrix includes an array of infrared beams which are preferably arranged such that interruption of at least one beam results in a signal being sent to the control system to bring about the playing of a given recording.

Preferably further still the system is provided with a digitizing means whereby information relating to newly acquired recordings can be stored on the control system via

the digitizer reading information provided with with said new recording. Such information including data concerning the number and nature of tracks per recording and/or data concerning a graphic image designed for the purpose of promoting the recording.

Preferably the digitizer comprises a scanning means adapted to scan a piece of information for example an album cover in order to load said information on the control system.

It will be understood that the provision of a digitizer enables the owner of a musical reproduction system in accordance with the invention to update the information stored in the control system.

Preferably the musical reproduction unit comprises a means for storing a plurality of recordings and preferably storage is in a manner whereby the control system can select any of one or more recordings for the purpose of playing said recordings simultaneously or sequentially.

From the foregoing it will be understood that an individual can store information relating to a variety of recordings in a central storage system and display information relating to said recordings on a television screen for the purpose of selecting a given recording for the playing on a musical reproduction unit. Recordings may therefore be stored in a musical reproduction unit in a predetermined sequence so as to be organised within the musical reproduction system and furthermore the storage of recordings in the musical reproduction system protects the recordings from damage and destruction.

It will also be understood that there are ergonomical advantages to be gained from a musical reproduction system in

accordance with the invention since the operation of same is an efficient and time conserving process.

An embodiment of the invention will now be described with reference to the accompanying diagram which shows, by way of example only, a musical reproduction system in accordance with the invention.

Referring to the diagram, it can be seen that the musical reproduction system comprises a monitor or screen which is ideally a conventional television screen 1 that has been adapted for the purpose of being used in a musical reproduction system. The television screen 1 is operationally coupled to a control system in the form of a computer 2. Computer 2 may either be built into the television unit 1 or be a separate entity which is removably attachable to television unit 1.

The system is also provided with a musical reproduction unit 3 which may comprise either a record player, a tape player or a CD player or any combination of these three items. Further, unit 3 is provided with a storage means adapted to store a plurality of records, tapes, CD's or any combination thereof. As can be seen in the diagram, unit 3 is provided with one to the nth storage spaces for the purpose of storing one to the nth CD's. Unit 3 is operationally coupled to computer 2 in a conventional fashion.

The system is further provided with a selection means whereby information displayed on the television 1 can be selected. The selection means is ideally in the form of a scrolling means which effects scrolling of information displayed on television 1. The scrolling means can either be in the form of a keyboard 4A which is operationally coupled to computer 2 in a conventional manner or alternatively, the scrolling

means may be provided in a remote control means whereby scrolling of information displayed on television 1 can be effected at a remote location with respect to the location of television 1. In this latter instance the system also includes a remote control means which ideally will be a conventional television remote controller 4 adapted for the purposes of interacting with computer 2 so as to bring about scrolling of information displayed on television unit 1.

Although the selection of information displayed on television 1 has been described with reference to a scrolling system it is to be understood that other ways of selecting information to be displayed on television unit 1 may be employed within the scope of the invention for example information may be selected by a menu driven system or a window driven system or any other conventional way whereby information to be displayed on the screen may be displayed in discrete interchangeable packages whose selection for display on television 1 is controlled by a keyboard 4A connected to computer 2 or a remote control unit 4 adapted to interact with computer 2.

In order to facilitate further use of the system a means is provided for up-grading information to be stored in the computer 2. This means comprises a digitizer 5 which is operationally coupled to computer 2. The digitizer may comprise any suitable scanning means which is able to scan information typically supplied with a newly acquired recording so as to transfer this information, which is usually located on the cover of the packaging provided with a recording, to the computer 2.

Further, since unit 3 is provided with a plurality of storage spaces labelled 1 to the nth, it will be possible to update the system by simply storing new recordings in unit 3 either

before or after information relating to same is placed on the computer 2.

In use therefore the system operates as follows:-

Information stored on control system 2 is accessed by either the keyboard 4A or remote control means 4. Once information in computer system 2 is accessed it is automatically displayed on television screen 1.

It will be understood that the information can be displayed in a variety of ways according to user requirements. For example it is possible to display information relating only to the recordings stored in the computer or, alternatively, it is possible to simultaneously display information relating to graphic representations located on the album covers relating to the recordings. Alternatively, it is possible to display information relating only to the graphic representations of the album covers.

Once the information is displayed on screen 1, it will be possible to alter the information displayed by means of the keyboard 4A or the remote control means 4. In this way a user can scan the information stored in the system 2 in order to make a choice. The choice made by the user will be indicated by means of a selection device located either in the keyboard 4A or the remote control means 4.

However, in an alternative embodiment of the invention, television 1 may be provided with a touch screen matrix such that an individual can select a recording to be played simply by touching information relating to that recording displayed on the screen. The matrix comprises an array of infrared beams which is adapted such that breakage of at least one beam represents the selection of a particular recording.

Once the selection has been made an appropriate signal is sent to the computer 2 which acts upon this signal by interacting with the musical reproduction unit 3. Computer 2 thus brings about the playing of any one of one to the nth recordings stored in the unit 3 by conventional means.

For the purpose of updating information stored in the system a digitizer 5 is provided so that the acquisition of a new recording can be incorporated into the system. This would typically be done by placing information relating to the new recording in the computer or control system 2 by scanning said information using the digitizer 5. After this is complete the recording is placed within the control unit 3.

It will be understood that the position of recordings in the control unit 3 will bear a functional relationship to the information stored on the computer or control system 2. This is so as to enable control system 2 to locate a given recording located in the musical reproduction unit 3. It will therefore be necessary for an individual using the system to load recordings in unit 3 according to the configuration of the control system 2.

From the foregoing description it can be seen that the invention provides for a musical reproduction system which stores information relating to a plurality of recordings and which is adapted to display information relating to the said recordings for the purpose of easy selection of at least one recording and subsequent playing of the selection by a musical reproduction unit. It will be apparent therefore that an individual could use the system at home so as to effect selection and playing of a given recording whilst occupying an armchair position with only the aid of a remote control device.

CLAIMS

1. A musical reproduction system comprising:

5 a) a monitor or screen adapted to display information relating to a plurality of recordings;

b) a control system operationally coupled to the monitor screen for the purpose of controlling the information displayed on the monitor or screen;

10 c) a selection means operationally coupled to the control system for selecting information displayed on the monitor or screen;

15 d) a musical reproduction unit operationally coupled to the control system whereby selection of a given recording displayed on the monitor or screen brings about the playing of the selected recording.

20 2. A musical reproduction system according to Claim 1 wherein, the monitor or screen is a conventional television.

3. A musical reproduction system according to Claim 1 wherein, there is further provided a remote control unit so that an individual can select a recording to be played from a remote location.

5 4. A musical reproduction system according to Claim 3 wherein, a remote control unit is a conventional television remote controller.

10 5. A musical reproduction system according to Claim 1 wherein, the selection means includes a scrolling means which enables a user to scroll through the information stored in the control system and displayed on the monitor screen.

15 6. A musical reproduction system according to Claim 1 wherein, the information displayed includes information relating to the recording.

7. A musical reproduction system according to Claim 6 wherein, the information displayed includes a representation of the packaging of the information such as an album cover.

20 8. A musical reproduction system according to Claim 7 wherein, the album cover is displayed at the same time as written information concerning the recording.

25 9. A musical reproduction system according to Claim 1 wherein, the information displayed includes an array of album covers and/or information relating to the recordings.

10. A musical reproduction system according to Claim 1 wherein, the selection means comprises a touch sensitive means whereby an individual using the system can select a recording to be played on the reproduction unit by simply pointing to or touching a pre-selected recording displayed on the monitor or screen.

11. A musical reproduction system according to Claim 10 wherein, the touch sensitive means includes an array of infra-red beams which are preferably arranged in that interruption of at least one beam results in a signal being sent to the control system to bring about the playing of a given recording.

12. A musical reproduction system according to Claim 1 wherein, the system is provided with a digitizing means whereby information relating to newly acquired recordings can be stored on the control system via the digitizing means.

13. A musical reproduction system according to Claim 12 wherein, the digitizer comprises a scanning means.

14. A musical reproduction system according to Claim 1 wherein, the unit comprises a means for storing a plurality of recordings for the purpose of playing on the musical reproduction unit in response to a selection by a user.

CLAIMS

1. A domestic musical reproduction system comprising:

- 5 a) a television adapted to display information relating to a plurality of recordings;
- b) a control system operationally coupled to the monitor screen for the purpose of controlling the information displayed on the monitor or screen;
- 10 c) a selection means operationally coupled to the control system for selecting information displayed on the monitor or screen;
- d) a musical reproduction unit operationally coupled to the control system whereby selection of a
15 given recording displayed on the monitor or screen brings about the playing of the selected recording.

2. A musical reproduction system according to Claim 1 wherein, there is further provided a remote control unit so that an individual can select a
20 recording to be played from a remote location.

3. A musical reproduction system according to Claim 2 wherein, a remote control unit is a conventional television remote controller.

5 4. A musical reproduction system according to Claim 1 wherein, the selection means includes a scrolling means which enables a user to scroll through the information stored in the control system and displayed on the monitor screen.

10 5. A musical reproduction system according to Claim 1 wherein, the information displayed includes information relating to the recording.

15 6. A musical reproduction system according to Claim 5 wherein, the information displayed includes a representation of the packaging of the information such as an album cover.

7. A musical reproduction system according to Claim 6 wherein, the album cover is displayed at the same time as written information concerning the recording.

20 8. A musical reproduction system according to Claim 1 wherein, the information displayed includes an array of album covers and/or information relating to the recordings.

25 9. A musical reproduction system according to Claim 1 wherein, the selection means comprises a touch sensitive means whereby an individual using the system can select a recording to be played on the reproduction

unit by simply pointing to or touching a pre-selected recording displayed on the monitor or screen.

5 10. A musical reproduction system according to Claim 9 wherein, the touch sensitive means includes an array of infra-red beams which are preferably arranged in that interruption of at least one beam results in a signal being sent to the control system to bring about the playing of a given recording.

10 11. A musical reproduction system according to Claim 1 wherein, the system is provided with a digitizing means whereby information relating to newly acquired recordings can be stored on the control system via the digitizing means.

15 12. A musical reproduction system according to Claim 11 wherein, the digitizer comprises a scanning means.

20 13. A musical reproduction system according to Claim 1 wherein, the unit comprises a means for storing a plurality of recordings for the purpose of playing on the musical reproduction unit in response to a selection by a user.

**Examiner's report to the Comptroller under
Section 17 (The Search Report)**

9117117.3

Relevant Technical fields

(i) UK CI (Edition K) G5R (RB72, RB73, RCC)

(ii) Int CI (Edition 5) G11B

Databases (see over)

(i) UK Patent Office

(ii)

Search Examiner

MR P R SLATER

Date of Search

21 JULY 1992

Documents considered relevant following a search in respect of claims

ALL

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X,E	GB 2241105 A (ARBITER) - whole document	1,3,5,6, 14
X,E	GB 2240869 A (BARCREST) - whole document	1,3,6-8, 12,14
X	GB 2210724 A (MUSIC HIRE) - whole document	1,3,6,14
X	EP 0313359 A2 (ARBITER) - whole document	1,3,5,6, 10,14
X	WO 86/01326 (KORN) - whole document	1,3,6,14

Category	Identity of document and relevant passages	Relevant to claim(s).

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).